

***NATO RESTRICTED**

**NORTH ATLANTIC TREATY ORGANIZATION
ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD**

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See Navy Distribution List N° 4 of AAP-4.

STANAG 1307 RAD (EDITION 2) - MAXIMUM NATO NAVAL OPERATIONAL ELECTROMAGNETIC ENVIRONMENT PRODUCED BY RADIO AND RADAR

References:

- a. MAS(NAVY)093-RAD/1307 of 15 May 1995 (Edition 2)(1st Draft)
- b. MAS(NAVY)310-RAD/1307 of 15 October 1986 (Edition 1)

1. The enclosed NATO Standardization Agreement which has been ratified by nations as reflected in page iii is promulgated herewith.
2. The references listed above are to be destroyed in accordance with local document destruction procedures.
3. AAP-4 should be amended to reflect the latest status of the STANAG.

ACTION BY NATIONAL STAFFS

4. National staffs are requested to examine page iii of the STANAG and, if they have not already done so, advise the Naval Board through their national delegation as appropriate of their intention regarding its ratification and implementation.



G.B. FERRARI
Major-General, ITAF
Chairman, MAS

Enclosure:

STANAG 1307 (Edition 2)



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**STANAG N° 1307
(Edition 2)**

**NORTH ATLANTIC TREATY ORGANIZATION
(NATO)**



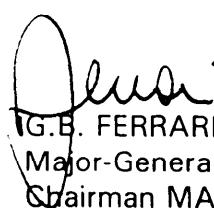
**MILITARY AGENCY FOR STANDARDIZATION
(M A S)**

**STANDARDIZATION AGREEMENT
(STANAG)**

**SUBJECT: MAXIMUM NATO NAVAL OPERATIONAL ELECTROMAGNETIC
ENVIRONMENT PRODUCED BY RADIO AND RADAR**

DISTRIBUTION STATEMENT "C" :
Distribution authorized to U.S.
Government agencies and their
contractors for administrative or
operational use. Other requests for
this document shall be referred to
Commander Naval Doctrine Command,
1540 Gilbert St., Norfolk VA 23511-2785.

Promulgated on: 4 February 1997


G.B. FERRARI
Major-General, ITAF
Chairman MAS

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RECORD OF AMENDMENTS

N°	Reference/date of amendment	Date entered	Signature

EXPLANATORY NOTES

AGREEMENT

1. This NATO Standardization Agreement (STANAG) is promulgated by the Chairman MAS under the authority vested in him by the NATO Military Committee.
2. No departure may be made from the agreement without consultation with the tasking authority. Nations may propose changes at any time to the tasking authority where they will be processed in the same manner as the original agreement.
3. Ratifying nations have agreed that national orders, manuals and instructions implementing this STANAG will include a reference to the STANAG number for purposes of identification.

DEFINITIONS

4. Ratification is "The declaration by which a nation formally accepts the content of this Standardization Agreement".
5. Implementation is "The fulfilment by a nation of its obligations under this Standardization Agreement".
6. Reservation is "The stated qualification by a nation which describes the part of this Standardization Agreement which it cannot implement or can implement only with limitations".

RATIFICATION, IMPLEMENTATION AND RESERVATIONS

7. Page iii gives the details of ratification and implementation of this agreement. If no details are shown it signifies that the nation has not yet notified the tasking authority of its intentions. Page iv (and subsequent) gives details of reservations and proprietary rights that have been stated.

NATO STANDARDIZATION AGREEMENT
(STANAG)

MAXIMUM NATO NAVAL OPERATIONAL ELECTROMAGNETIC
ENVIRONMENT
PRODUCED
BY RADIO AND RADAR

Annex A : Maximum NATO Naval Operational Electromagnetic Environment Produced by Radio and Radar.

AIM

1. The aim of this agreement is also to define the maximum electromagnetic environment produced by Radio and Radar which may be encountered in NATO Naval Operations.

AGREEMENT

2. Participating nations agree to the Naval Operational RADHAZ Environment as set out in the Annex A.

DEFINITIONS

3. The following terms and definitions are used for the purpose of this agreement:

- a Electric Field Strength. The strength of the electromagnetic radiation at a given point expressed in Volts per metre (V/m).
- b Average power density. The average intensity of electromagnetic radiation at a given point expressed in Watts per square metre (W/m²) during a given time period.
- c Pulse Energy Density. The amount of the energy of the electromagnetic radiation per pulse per surface unit expressed in Joule per square metre (J/m²)
- d Peak Pulse Power Density. The peak value of the power of the electromagnetic radiation per surface unit expressed in Watts per square metre (W/m²)

IMPLEMENTATION OF THIS AGREEMENT

4. This STANAG is implemented when a nation has issued the necessary orders or instructions to the authorities and units concerned putting this agreement into effect.



MAXIMUM NATO NAVAL OPERATIONAL ELECTROMAGNETIC ENVIRONMENT PRODUCED BY RADIO AND RADAR

FREQUENCIES IN MHZ	ELECTRIC FIELD STRENGTH (V/M)	AVERAGE POWER DENSITY (W/m ²)	PEAK POWER DENSITY (W/m ²)	PULSE ENERGY DENSITY (J/m ²)
RADIO - TRANSMISSION				
0.15 - 0.2	300			
0.2 - 0.6	300			
0.6 - 1.5	200			
1.5 - 32	200			
32 - 100		10		
100 - 200		10		
200 - 790		10		
790 - 1000		10		
RADAR - TRANSMISSIONS				
150 - 225		200	$3 \cdot 10^4$	0.5
225 - 790		150	$1.5 \cdot 10^3$	0.5
790 - 850		4000	$1 \cdot 10^6$	10
850 - 950		4000	$1 \cdot 10^6$	10
950 - 1400		4000	$2 \cdot 10^6$	10
1400 - 2700		4000	$1 \cdot 10^6$	10
2700 - 3600		4000	$2 \cdot 10^6$	5
3600 - 5400		1000	$1 \cdot 10^6$	5
5400 - 5900		4000	$4 \cdot 10^6$	4
5900 - 7900		1000	$1 \cdot 10^6$	3
7900 - 8400		1750	$1.75 \cdot 10^6$	3
8400 - 8500		4000	$4 \cdot 10^6$	5
8500 - 11000		4000	$4 \cdot 10^6$	6.3
11000 - 14000		1000	$1 \cdot 10^6$	3
14000 - 18000		1000	$1 \cdot 10^6$	3
18000 - 40000		200	$2 \cdot 10^5$	0.5

NOTE Parameters in each column for each frequency band are not necessarily derived from a single emitter.



RATIFICATION AND IMPLEMENTATION DETAILS
STADE DE RATIFICATION ET DE MISE EN APPLICATION

NA-TION	NATIONAL RATIFICATION REFERENCE DE LA RATIFICATION NATIONALE	NATIONAL IMPLEMENTING DOCUMENT NATIONAL DE MISE EN APPLICATION	IMPLEMENTATION/MISE EN APPLICATION					
			FORECAST DATE PREVUE			ACTUAL DATE REELLE		
			NAVY MER	ARMY TERRE	AIR	NAVY MER	ARMY TERRE	AIR
BE								
CA	2441-1307 (DMCS 5) of/du 8.9.95	STANAG					1.97	
DA	MA.204.67-S.1307.MAM3- 25276 of/du 8.12.95	SMK BST 654-1(B) and STANAG					1.98	
*FR	132/DEF/EMM/OPL/NCO of/du 3.6.96	NOT IMPLEMENTING/ NE MET PAS EN APPLICATION						
GE	BMVg-Fü S IV 2 Az: 03-51-30 of/du 16.10.95		1.97					
GR	060.1307/1/95 of/du 18.8.95						1.97	
IT								
LU	NOT PARTICIPATING/ NE PARTICIPE PAS							
NL	MOD NL Ltr MAS/N/5544/NU/95/1307	DOES NOT RATIFY/ NE RATIFIE PAS						
NO	MAS/935/95/FO/SST/ORG1 /EOB/STANAG 1307 of/du 6.10.95						1.97	
PO	RRN 107/96/DA of/du 27.6.96	STANAG	1.97					
SP	NOROPE 052/1307/021D of/du 5.7.95	STANAG					1.97	
TU	Gn.P.P: 2307.536-95/AND. D.(MAS.S/1307) of/du 29.7.95		2.97					
UK	D/DEF SYS/328/307 NMST of/du 5.9.95	NES 1006 ISSUE 3					1.97	
+US	US NDC Ltr 3512 Ser N331C/752 of/du 4.11.96	NOT RATIFYING/ NE RATIFIE PAS						

See overleaf reservations(*)/comments (+)

Voir au verso réserves (*)/commentaires (+)

Releasable to NACC/PfP Non Releasable

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RESERVATIONS/RESERVES

FR: France will not implement STANAG 1307 because some information they deem essential at this point in time to efficiently implement said STANAG are lacking. France draws other nations' attention to the fact that this lack of information can lead to excessive hardening of ammunition and thus to unacceptable extra costs. Lacking information is as follows:

- a. Distances at which environmental levels specified in STANAG can be reached and maximum area of zone affected by radiation inside which such levels can occur in a uniform fashion.
- b. Probability of occurrence PI of each level expressed as a percentage of emitting sources capable of generating such a level.
- c. For each frequency band, environmental level equivalent to probability of occurrence immediately below P1 (defined in b.).

FR : La France ne mettra pas en application le STANAG 1307 en raison de l'absence de certaines informations qui lui paraissent actuellement indispensables pour l'appliquer efficacement. La France attire l'attention des autres nations sur le fait que ce manque d'informations peut conduire à des excès de durcissement des munitions et donc à des surcoûts inacceptables. Les informations manquantes sont :

- a. Les distances auxquelles les niveaux d'environnement indiqués dans le STANAG peuvent être atteint et la surface maximale de la zone irradiée dans laquelle de tels niveaux peuvent exister de façon uniforme.
- b. La probabilité d'occurrence PI de chacun des niveaux exprimée sous la forme d'un pourcentage de sources d'émission capables de les générer.
- c. Pour chaque bande de fréquences, le niveau d'environnement correspondant à la probabilité d'occurrence immédiatement inférieure à P1 (définie en b).

COMMENTS/COMMENTAIRES

US : US Navy does not ratify STANAG 1307 (Edition 2) due to numerous shortcoming.

US : La Marine US ne ratifie pas le STANAG 1307 (Edition 2) car elle estime qu'il présente trop de lacunes.